

25
VICHY:

ITS

MINERAL WATERS,

SALTS AND LOZENGES.

THE VICHY COMPANY

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FRENCH AND FOREIGN

MINERAL WATERS.

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THERMAL ESTABLISHMENT OF VICHY.

PROPERTY OF THE FRENCH STATE,

AND UNDER GOVERNMENT SUPERVISION.

MINERAL WATERS,
SALTS AND LOZENGES.

V I C H Y.

CENTRAL OFFICES :

22, BOULEVART, MONTMARTRE,
PARIS.

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VICHY.

The Thermal Establishment of Vichy is now very easy of access from Paris by the Lyons-Bourbonnais railway (the station in Paris is near the place De la Bastille), which line has a branch in the town. There are two express trains daily, which perform the journey in eight hours.

Vichy occupies the first rank among the watering places of France.

During the season it is visited by more than twenty-five thousand persons, including the chief members of the aristocracy and the fashionable world.

The Thermal Establishment was commenced in 1784 by the munificence of Mesdames Victoire and Adélaïde, aunts of Louis XVI., and finished in 1829. Its owners, the French Government, have let it on a lease to the Company.

The Establishment now consists of 350 baths and 150 shower baths, hot or cold, of different kinds.

The invalid who visits Vichy is certain to find relief if not cure.

The course of treatment generally consists of ordinary baths and of the waters taken at the springs.

The two periods of the season best suited to follow the treatment with success, are from the 15th May till the end of June, and from the 15th August till the beginning of October; patients may visit Vichy at any season of the year and will always find the Establishment ready to receive them as at Bath, Buxton or Clifton.

The elegant new Casino of the Establishment is open every evening for balls, concerts and theatrical performances; and for those persons who prefer more tranquil pleasures, there are card, billiard and reading rooms, and above all a saloon reserved for ladies. During the season open air concerts of dance music and selections from the most popular operas are given every morning and afternoon in the park by a band of about 40 of the best artists of Paris. Those recreations conduce much to the general lively and animated appearance of the town, and indicate that pleasure and fashion are happily combined with the medical treatment.

SPRINGS OF THE ESTABLISHMENT OF VICHY.

The springs, as regards their chemical composition, bear a certain resemblance to each other, their greatest difference being that of temperature; as however they cannot be employed indiscriminately, the following information relative to the different affections for which those mineral waters are generally prescribed by physicians, will be found useful to patients:

GRANDE-GRILLE.

Temperature, 42 degrees centigrade (Fahrenheit 107).—Congestion of the liver, spleen, obstructions of the viscera, bilious calculi, gravel, etc.

HOPITAL.

Temperature, 31 degrees (Fahrenheit 87).—More adapted for delicate patients of nervous susceptibility or disposed to pulmonary congestion or hæmorrhage. It renders the best services in cases of indigestion, want of appetite, and ovarian tumours.

CÉLESTINS.

Temperature, 14 degrees (Fahrenheit 57).—Is prescribed for affections of the kidneys or bladder, gravel, urinary calculi, gout, diabetes, and albuminuria.

HAUTERIVE.

Temperature, 15 degrees centigrade (Fahrenheit 59).—Prescribed like the Célestins, and is effectual for affections of the kidneys or bladder, gravel, urinary calculi, gout, diabetes. This spring contains a greater quantity of carbonic acid, and is therefore more suited for foreign use and patients at a distance from the springs, on account of its portable qualities.

MESDAMES.

Temperature, 16 degrees (Fahrenheit 61).—Very ferruginous; is especially applicable for poorness of blood, chlorosis, whites, also in cases of lengthy recovery and *adynamia*. Is likewise beneficial to nervous temperaments, which require at once a strengthening but resolute and calming treatment.

PUITS-CHOMEL.—Not Exported.

Temperature, 45 degrees (Fahrenheit 112).—Recommended more especially for persons afflicted with pulmonary catarrh, nervous dyspnoea and susceptibility of the respiratory organs.

PARC.

Used for the same complaints as CELESTINS and HAUTERIVE.

Experience however shows daily that in some conditions of sex, age or constitution, the waters of certain springs may be replaced by others, and it is in their choice and application that the direction of a medical man is necessary. When the water is exported it has however been noticed that the difference between the various springs becomes very slight.

THE VICHY WATERS AND THEIR MEDICAL USES.

The use of the **Natural Waters** of Vichy has become now almost universal. Their renovating action is not only shown in disorders of the digestion, but also in all chronic maladies of the abdominal organs. They are also effectively used by persons in good health, their use often preventing uneasiness of the stomach, especially after meals. This explains the increasing use of the Vichy waters among all civilized nations.

The waters are alkaline and slightly effervescent, and agreeable to the palate.

Being easily absorbed and conveyed by the circulation through the entire system, they produce more or less excitement, which has the effect of restoring the vitality of the tissues and the mucous membrane, and in the words of Bordeu, a celebrated French physician, "Producing a general winding up of the system."

The Vichy waters by rendering the blood more alkaline make it less liable to become coagulated, and cause it to circulate with greater facility. The mineral waters are thus a sovereign remedy in all cases of congestion.

One of the chief applications of the Vichy waters is as a remedy for the diseases of the stomach known under the general name of **dyspepsia**. In those cases a visit to Vichy is quite unnecessary, the habitual drinking of the bottled waters alone being all that is required. Many persons, otherwise in good health, are troubled after meals with uneasy sensations in the stomach, flatulency or headache, sometimes accompanied with a general lassitude and incapacity for any exertion. Those symptoms last an hour or two, sometimes more, according to the duration of the process of digestion, and then disappear until the same uneasiness is again brought on by the next repast. That inconvenience is invariably removed by simply drinking the Vichy waters in bottles.

By their use the stomach recovers all its activity, the appetite is improved, and the digestion accomplished insensibly and without any of the painful results previously suffered. When the digestive organs have once recovered their normal state, a recurrence of the dyspepsia may be prevented by the mere drinking of the waters mixed with wine or otherwise,

at meals. In these cases of debility of the digestive organs the waters of the Hopital spring are generally prescribed as containing more unctuous matter, by their mild effect they are better adapted for weak stomachs, but it is not advisable at first to take very large doses. With some persons a cold spring such as the Hauterive has more success.

Mineral waters not only strengthen the digestive organs, but produce a chemical action on the gastric juice: thereby diminishing its acidity. The experiments made by Dr. Bernard of the Institute show to what an extent the digestive organs are influenced by the presence of acids or alkalies in liquids which contribute to the digestion.

For **diseases of the liver** the Vichy waters have long enjoyed a great reputation, and in cases of chronic inflammation of that organ, or in complaints of the biliary ducts, they may be said to work miracles. "When the affections of the liver become complicated with jaundice, there is more frequently a derangement of the biliary secretion than an affection of the liver itself. It often happens in this case, that calculi or gall stones are formed in the biliary vessels, and their expulsion causes painful attacks, which have been designated **hepatic colics**, and are often accompanied or followed by jaundice. If the use of the Waters is continued they are almost certain to effect a cure of this disorder. They may not immediately prevent the attacks, which are liable to return as long as biliary calculi exist, but by rendering the bile liquid and preventing its coagulation, they prevent the recurrence of the disorder."

The Vichy waters, aided by a proper regimen, have a most advantageous effect in the treatment of **gout**.

This disease, according to Dr. Petit, is caused by an excess of uric acid in the blood or in the elements composing it, and in most cases exists simultaneously with red gravel. The resemblance between these diseases is the more striking when the nature of the concretions that the gout leaves around the joints and in other parts of the body is examined; chemical analysis proves that they are mostly formed of urates of soda, and having for foundation uric acid, as in the case of red gravel, there exists with gouty people a superabundance of uric acid. When the urinary secretion becomes insufficient to remove this acid, and when it is turned from its ordinary channel by elimination, it settles particularly in the joints. To combat this gouty diathesis, and to relieve, if not cure, the gout, the use of the Vichy waters is necessary, as alkaline drinks have the property of neutralizing the excess of uric acid.

They may not often succeed in eradicating the disease, but they invariably diminish the frequency, severity, and length of the attacks, and avert or attenuate the accidents which may thereby arise, and although they do not always disperse the nodes and other concretions deposited about the joints, they easily remove the rigidity of the ligaments and muscular contractions.

If prudence should counsel the suspension of the treatment on the approach or during an attack, it has been proved on the contrary that when the use of these waters has been continued, the pain is less severe and lasts a shorter time than in other paroxysms.

Gouty persons have no aversion to these waters: they generally take the most powerful, those of the **Celestins** or **Hauterive** springs, and also in considerable quantities, without feeling any inconvenience.

It is of the greatest importance that the use of the waters should be continued after leaving Vichy, or the benefits of the treatment undergone at the Thermal Establishment will soon be lost. To guarantee the entire success of the treatment the use of the waters should be continued for two or three years, according to the requirements of the case. The action of the waters, according to Dr. Durand-Fardel, is nearly the same in all cases of gout, whether hereditary, chronic, or acute or Rheumatic Gout.

Persons afflicted with **gouty-gravel** are those whose digestive functions are too powerful and easy and are not compensated by exercise which stimulates the respiratory organs. It is a disorder of persons in good health, corpulent or at least stout, and sufficiently muscular. Long before the disorder of gravel, or urinary calculi, was treated medicinally, the use

of alkaline drinks was recommended, and the Vichy waters in particular were renowned for their efficacy in calculous affections.

Patients afflicted with this disease find an immediate relief from the treatment followed at Vichy. The urine becomes immediately alkaline ; it is secreted more abundantly and without pain, dissolving and dispersing the slimy and purulent matter resulting from irritation of the mucous membrane. The urine loses its thickness and becomes clear and limpid, and at the same time the passing of blood, nephritic colics, pains in the region of the kidneys, and urethra, and bladder complaints occasioned by the presence of calculi, are soon relieved : sleep and appetite return, and the patient who on his arrival at the baths could scarcely walk, is enabled, at the end of a few days, to take daily exercise.

Gravel is often only the first stage of calculi, and constitutes the core which when deposited in the bladder, increases gradually by the superposition of the matter which the urine precipitates, until its volume obstructs the duct of the urethra ; hence the importance of dissolving the gravel as soon as it commences to form

Uric acid or red gravel is the most common. Alkalies possess the power of dissolving this acid, and by the use of Vichy water the urine becomes promptly alkaline. It is easy to appreciate all the advantage arising from a chemical combination in the treatment of this special stage of the disorder. The uric acid combined with soda forms urate of soda, which being more soluble than the acid is dissolved in the urine and is afterwards discharged.

The passage of albumen in the urine is known under the name of albuminuria. The character of this complaint is impoverishment of the blood, deranged circulation and partial or general dropsy. The use of these waters has given of late such unexpected results that they merit the attention of the Faculty. The danger attending this complaint is such that it requires the immediate application of all the resources of art. Experience shows that this disorder in its earliest stage, if not complicated with serious organic derangement has great hope of a successful cure. The only treatment capable of arresting its progress, is a high tonic and strengthening diet, accompanied with generous wines, alcoholic drinks, and mineral waters : means calculated to reanimate the digestive organs, regenerate the albuminous elements, and reconstitute the normal state of the fluids.

The characteristic of **diabetes** is an excessive secretion of urine with more or less sugar. The urine is colourless and of a thin milky appearance, and when brought to effervescence by a solution of soda or lime of potash, it becomes a reddish brown, which takes a lighter or darker shade according to the amount of sugar.

This disorder is accompanied with dryness of the mouth, excessive thirst, great hunger, general weakness, constipation, and in fact all the symptoms of consumption and phthisis arising from the presence of sugar in the urine.

With persons in perfect health the alkaline properties of the blood are sufficient to disperse the sugar, but where these properties do not exist in sufficient quantities, the sugar in the urine is not dispersed. The sugar not being dissolved or assimilated, spreads itself through the system and becomes a foreign body, and as such is ejected from the glands of the loins and all the secretory vessels ; such is the case in this disease. In fact, sugar has been found to exist in sweats, blood, and in all secretions of the patient afflicted with diabetes.

The complaint of diabetes, therefore, arises from a want of alkaline, necessary to the animal system. With persons in good health, the blood contains alkaline properties which are necessary for the functions of the visceral organs. But the constant introduction of the elements of acids in the system would have a tendency to predominate if they were not counteracted and eliminated by special and acid secretions by means of perspiration and the urine.

People who live in cities and partake of a strong animal diet and therefore perspire but little, have not sufficient alkaline properties in the system

and are in consequence liable to uric gravel, gout, diabetes and, rheumatism, whereas people living in the country, who are more or less subject to great activity or manual labour, and in consequence perspire freely, which combined with an almost entire vegetable diet, keeps the blood sufficiently alkaline and is the cause of their escaping the infirmities of the sensual and rich.

But for more ample information we must refer our readers to special works on the subject.

Chlorosis is by no means an insignificant disorder, and ought not to be neglected. According to Dr. Petit there are no complaints in which the Vichy waters have a more salutary effect.

Whether this malady arises from a peculiar state of the organs of generation or from other causes, or whether connected with indigestion, and other disorders which may complicate it, is of little moment. These waters have a most beneficial effect, and either from the quantity of iron they contain, those of the **Mesdames** spring in particular, or from the vitality given to the whole vascular system, by the combined mineral elements, the health of the patient is sensibly ameliorated.

In fine, the effects of these waters are more appreciable, when the patient is in a weak state of health.

The efficacy of chalybeate water in all cases of this disorder elevates it to the rank of a specific medicine.

In all cases of obstructions, and in almost all chronic affections, those of the abdomen especially, the Vichy waters constitute a most powerful remedy.

There are some forms of obstruction exceedingly rebellious, and said to be chronic, and which complicate certain deviations of the uterus. The neck of the womb becomes pressed on the lower part of the vagina and the periodical discharges are effected with difficulty. At each monthly flow there forms in the interstices of the uterus a deposit of fibrine and coagulated matter, which increases the size of the womb and predisposes women to fibrous tumours. The iodine preparations to which so much importance is attached are insufficient. It is therefore necessary to infuse into the system a principle which renders the blood more alkaline, and less coagulable. The Vichy waters having the effect of dissolving the albumen and fibrine and removing those substances, their use cannot be too greatly recommended. The spring to be used in preference is that of the **Grande-Grille**. It is often necessary to add an external treatment which consists of vapour and hip baths, and which are found to be an excellent remedy.

The Vichy waters are used with advantage to remove the secondary symptoms of **syphilis**.

When the strictures have disappeared after the usual operations, and the urethra having recovered its primitive dimensions there exists no further obstacle to the discharge of urine, it often occurs that extensive derangements of the kidneys and bladder occur; they take a long time in curing and continue to keep the patient in an interminable indisposition. In such cases the Vichy waters are indispensable, and are therefore recommended by physicians as a definitive cure.

The Vichy waters are a beneficial means of remedying **obesity** by their influence in removing the fat, and restoring activity to the body. In cases of **inflammation** they are also frequently prescribed from their well known efficacy in lessening fever, diminishing thirst, and restoring calm.

VICHY TREATMENT AT HOME WITH THE BOTTLED WATERS.

With the **Vichy natural Waters** as a drink and the use of the **Salts in Baths** a complete Vichy remedy may be effected at home. This treatment is at the same time reparative, stimulative, resolute and desobstruent.

"The consumption of mineral waters exported to a distance from the springs is not so largely practised as might be done with advantage, and with the exception of the natural waters of Vichy, some others of a purgative nature (for which artificial compositions are generally preferred) and certain sulphureous springs, how many physicians never employ systematically, in the treatment recommended by them, any mineral waters ! With some, that sort of exclusion arises from erroneous notions as to the properties of the mineral waters ; with others it depends on the idea that mineral waters when exported lose all their virtues. It would not be more correct to deny the utility of mineral waters taken at a distance from the springs, than to pretend to substitute for a thermal treatment the use of the waters at home. A thermal treatment is a mode of remedy ; a bottled mineral water is a medicine. Such is the idea which should be formed, in therapeutics, of each of those means.

"There are however many circumstances in which recourse should be had to the use of bottled mineral waters ; the properties which they possess being almost the same as those contained in the waters taken at the springs, the bottled waters are of great utility. Distance, business, and expense sometimes prevent persons from visiting the mineral springs recommended. If that is true for the inhabitants of a country in which the spring is situated, how much more so must it apply to the inhabitants of distant countries, and with respect to the Vichy waters in particular, to the residents of the English and French colonies, who will find in the use of those waters a most appropriate remedy for the disorders which follow the different serious epidemical and endemical maladies which prevail in tropical regions."—(*Durand Fardel.*)

The Vichy Salts are extracted by evaporation and are then made up into packets of the exact quantity contained in a bath at the thermal Establishment and by dissolving one of these in a bath of common water the patient is able to enjoy the benefits of the bathing season at Vichy without leaving his own home.

All the products of Vichy are made under the surveillance of the Government Agents. Thus it is that the treatment can so easily be continued at home.

Those waters are also remarkable for the facility with which they are preserved ; they scarcely undergo any change whatever, chemically or medicinally, even after a very considerable lapse of time, and for that reason are especially adapted for use in India and the colonies. Their perfect preservation is due to the nature of the waters themselves, and to the extreme care with which they are bottled and corked under the inspection of Government Agents. Even after a sea voyage and several years in dépôt, these waters have shown no appreciable alteration. The bottles should be, however, kept in an horizontal position, and in a cool and dry place.

DIRECTIONS FOR TAKING THE BOTTLED VICHY WATERS.

The different springs are not all equally adapted for home use and exportation ; the cold springs best adapted are : **Les Celestins, Hauterive Parc, and Mesdames** (very ferruginous), and the warm : **La Grande-Grille, and l'Hopitalle.**

We have already stated that the Vichy waters are agreeable to the palate.

The best time for taking the waters at home is in the morning, fasting, but if that manner is attended with any inconvenience they may be taken

at meals ; in the latter case they may be mixed with wine, beer, spirits or tea.

When the warm springs are used, it is not necessary to bring these waters to their natural or primitive temperature, but should it be desired, the best means of increasing the temperature is by steeping the bottles in warm water, or better still, by mixing them with an infusion of diet-drink or other warm liquid, as tea for example.

The usual dose of Vichy water is from one to two bottles per diem ; if taken pure, an interval of a quarter of an hour should be allowed to elapse between each glass. It is however preferable to use the waters by half bottles and unmixed, as is done at the spring itself.

During the Vichy water treatment patients need not abstain from wine, milk, vinegar or fruit ; the diet should however be adapted to the different stages of the treatment.

ARTIFICIAL MINERAL WATERS OF VICHY.

“Go to the natural springs, says Dr. Bourdon, a celebrated French physician, nature is far better than the laboratory.

“I cannot blame in too strong terms, the use of artificial mineral waters. They never replace those of the natural springs : to give the name of Vichy waters to a mere solution of bicarbonate of soda is as absurd as to give the name of wine to a mixture of cream of tartar, alcohol and mineral salts, which this liquid is proved to be, when analysed.”—*Dr. Barthez.*

“Artificial mineral waters, of the best fabrication, are in a medical and chemical point of view, only a poor counterfeit of the real waters, whose name they usurp. They are doubly pernicious, as they do not attain the physician’s aims, and cast a certain discredit on the genuine production. An objection raised by some patients when advised to take the waters at Vichy is, that they have already tried without any benefit the artificial mineral waters ; as if there existed the slightest comparison between them.”—*Dr. Barthez.*

Such is Dr. C. James’s general anathema against the use of artificial waters, and in another part of his work, which has a special reference to the Vichy waters, he says :—

“The same quantity of alkaline salts dissolved in a quart of pure water, as is contained in a like quantity of Vichy water, tires the stomach without producing any of the good results of the natural waters, which are evidently something more than a simple alkaline solution ; there is, either in the elements already known to exist, or in those not yet discovered, a combination which we are unable to explain, but of which we cannot but recognise the influence.”

DIGESTIVE VICHY LOZENGES.

Manufactured by the thermal Establishment under the supervision of the State.

The Vichy lozenges enjoy a celebrity which is daily increasing.

They are composed of a mixture of sugar and gum with natural salts extracted from the Vichy waters ; it is to those salts which exist in the lozenges in a very large proportion that they owe their efficacy. Those salts, as is generally known, are extracted from the springs by means of special evaporating apparatus ; the State, in the interest of the public health has imposed on the Company, the Control of a Government commissioner, charged with superintending the extraction of those salts and verifying their purity. Those salts, when chemically analysed, are found to contain all the mineral properties of the Vichy Waters.

To what stomachs are the Vichy Lozenges suited ?

The Vichy Lozenges should be taken by :

1. Those persons whose digestion is difficult, painful or laborious, and who feel after eating a weight on the stomach for a more or less considerable time (atonical dyspepsia).

2. By those persons in whom the digestion is accompanied by more or less generation of gas (flatulent dyspepsia).

In case of slow or difficult digestion six or eight of the lozenges should be taken before each repast. Experience shows that alkalines taken fasting and in small doses increase the gastric juice, which is precisely wanting in those cases. (*Traité des maladies de l'Estomac*. Dr. Carnet, 1865).

If there is a generation of gas, the same dose of Vichy Lozenges should be taken after each repast.

This superabundance of gas often depends (when not arising from indigestible food) on the atony and inertia of the digestive organs. The lozenges assist the work of digestion and prevent the formation of gas.

To what stomachs are the Vichy lozenges not suited?

They should not be taken by persons suffering from acid dyspepsia and gastralgic dyspepsia, that is to say :

1. By those persons whose digestion is accompanied by acidity and arising which produces in the throat a sensation of heat or heartburn more or less acute, and which acidity is due to a too abundant secretion of the gastric juice by the stomach. The ill effects produced in such cases by the lozenges arise from the sugar they contain, which causes in the stomach the secretion of a quantity of gastric juice, already too abundant. But if in those cases the Vichy lozenges are not suitable, the Vichy water taken as a drink should be then employed ; it constitutes an excellent and infallible means of neutralising the secretion of the gastric juice and removing that acidity.

2. By persons who suffer in the intervals of meals from cramps and more or less acute pains of different kinds. Experience has shown that in such cases the Vichy lozenges are powerless to calm those painful symptoms and should be replaced by some narcotic preparation.

Those lozenges are flavoured with peppermint, lemon, vanilla, rose, tolu, orange flowers or anisette ; they may also be had unflavoured.

They must be kept in a dry place, otherwise they will acquire an unpleasant taste.

The dose consists of six or eight, taken before or after each meal.

OPINIONS

OF DIFFERENT MEDICAL MEN UPON THE VICHY WATERS.

EDWIN LEE, M.D.

Corresponding or Honorary Member of the Medical Academies and Societies of Paris, Brussels, Berlin, Madrid, Turin, Naples, Florence, Munich, &c.

"The operation of these waters is alterative, resolvent, and diuretic, without being aperient or diaphoretic ; it affects most perceptibly the kidneys, increasing the quantity of their secretion, and altering its quality so as to render it alkaline after a person has drank three or four glasses or taken a bath. The drinking is the essential part of the treatment, though most patients combine with it a course of bathing ; the water for the baths is often diluted with common water, otherwise its action, daily repeated, would be, in some cases, too stimulating. From the difference of temperature, and of amount of impregnation of the waters, they are applicable to a variety of pathological conditions.

"The water taken internally has the effect of exciting the appetite and improving the digestion in those cases where it is indicated.

"Cachetic states of the system, when produced by organic diseases, or by a residence in malarious countries, are mostly removable by the Vichy waters, which directly attack the cause of the constitutional deterioration. Dr. Barthez, late physician to the military hospital, who had abundant opportunities of observing the effect of the waters in the cases of invalid soldiers who had been long stationed in Algeria, remarks upon

this point, that when the general morbid state is the result of a residence in unhealthy climates, of an imperfect state of the digestive apparatus which is consequent upon organic disease of the liver or spleen, the alkaline Vichy waters, chalybeate or others, re-establish the vital powers, by advantageously modifying the morbid state upon which their deterioration depends, and by arousing the *ensemble* of the digestive and assimilative functions. They also constitute the alterative specific remedy most favourable for removing the poisonous effects of marsh miasmata, the presence of which in the blood hinders the return to a perfect state of health; they act in these cases like fresh vegetables in scurvy, or mercurial or iodine preparations in other affections.

"The Vichy springs are most efficacious in a variety of deranged states of the digestive apparatus, especially connected with the abdominal *engorgement* or obstruction, chronic enlargement of the liver or spleen and their frequent concomitant hemorrhoidal complications; in long-standing stomach disorder with acidity, but not too greatly depressed powers, in some forms of gout, and in calculous affections.

"In a large proportion of instances, disordered digestive function precedes the manifestation of diathetic affections, which become evident as the quality of the blood becomes more and more deteriorated, which is not unfrequently after a long series of years, and (especially as regards the gouty diathesis) as persons approach, or when they have passed the middle period of life, particularly if they have led an indolent existence, and have been addicted to the pleasures of the table. The deterioration of the constitution in these cases is usually marked by increased derangement of the digestion, defective or vitiated biliary secretion, hemorrhoids, diminished muscular and nervous energy, an unhealthy expression of the countenance, and not unfrequently more or less abdominal protuberance. It is, therefore, highly important to prevent, if possible, the occurrence of this disastrous result, by having recourse in time to the agencies best calculated to remove the existing chronic digestive derangement, among which the thermal springs of Carlsbad and Vichy hold the first rank.

"The Vichy waters have, however, a beneficial effect when exported, whereas the Carlsbad waters require to be taken on the spot to ensure a prospect of advantage.

"Persons who have lived a too sedentary life, as those engaged in literature, or confined to offices or counting-houses during the greater part of the day, especially if breathing the confined atmosphere of a large city, even if they do not suffer from positive indigestion, are yet often subject to derangement of the digestive functions with imperfect assimilation, connected with an undue preponderance of the abdominal venous circulation, inducing depression of spirits, or irritability of temper, which are often ascribed to extraneous or accidental circumstances.

"In similar cases the blood is too highly carbonised, and becomes further vitiated from the inactivity of the cutaneous functions, owing to want of sufficient exercise in the open air, whence noxious matters that should be excreted by this means are retained in the system. Under any similar condition, nothing is so well calculated to remedy the disorder as the employment of an appropriate mineral spring internally, combined in most instances with baths, so as to equalize the circulation by their physical operation, while at the same time the quality of the blood is improved by the absorption of the principles of the water. These objects would generally be effected by the use of the Vichy springs.

"Gout is a disease in which the greatest amount of benefit may be expected from the agency of suitable mineral springs; in the complete intervals of acute gout, and more especially in strong, robust subjects, where the disease depends rather on increased formation than on defective elimination of uric acid, and in cases in which the liver and digestive functions are at fault, the employment of these waters is likely to prove most beneficial.

"I have known many great sufferers from gout who have derived much advantage from a course of mineralized baths without drinking any of the water, and some have, year after year, employed these means.

as a preservative against their winter attacks, which, when they could not be altogether prevented, have occurred in a greatly mitigated form.

"There can be no doubt that the alkaline property of the water is an important element in the benefit which many gouty patients derive from Vichy ; and this, which is proved by experience, is only what one would be led *a priori* to infer on perceiving its evident effects in correcting the lithic acid diathesis, as manifested by the presence of gravel and calculus with which gout is so closely connected.

"When gout, says M. Prunelle, a former Government inspector at Vichy, has a tendency to affect internal organs, as the stomach, the Vichy water will be useful in strengthening the viscus, acting in the same way as Bordeaux or Madeira wine in these cases. There is a kind of gout that may be called *soft* gout, in which nature has not the power requisite to produce a true crisis ; the patients experience incomplete attacks : it is rather an habitual state of suffering ; they walk, as they say, upon sponges.

"In such a case the Vichy water is one of the best tonics for coming to the assistance of nature—it will favour the manifestation of the attack, and thus relieve the patient of the disorder. The Vichy waters have consequently justly acquired considerable reputation in cases of gravel of the lithic acid kind, the secretions becoming speedily alkaline and the quantity of gravel diminishing, if not altogether disappearing, soon after their commencement. In small calculi of this variety their employment is frequently attended with marked beneficial results, by preventing their increase, and sometimes by procuring their expulsion.

"The question of the actual dissolution of calculi in the bladder was warmly debated several years ago in the Academie de Medicine, and in the medical journals, on the occasion of numerous instances brought forward by M. Petit with a view to prove this solvent power ; and M. Chevalier, the eminent chemist, instituted a series of experiments which showed that urinary calculi placed in Vichy water became disaggregated in some instances, in others lost some of their weight after a longer or shorter period. The following conclusions on this head were arrived at in the report made to the Academie by MM. A. Benard, O. Henry, and Pelouze :—

"1. The natural mineral water of Vichy indisputably acts upon urinary calculi.

"2. Calculi, placed in contact with the water of the Vichy springs, present evident marks of its dissolvent and disaggregating action, and calculi, while in the bladder, are in like manner acted upon by the urine, after it has been rendered alkaline by means of the Vichy water employed internally and in the form of baths.

"3. The proofs of such action are manifested by the alteration which the urinary concretions passed by the patients have undergone ; by their diminished size as signalled by catheterism and by direct inspection ; by the presence of substances in a state of dissolution, formed at the expense of the new principles contained in the urine, and of the elements of the calculus with which they are combined.

"4. The action of the alkaline bi-carbonates is exerted more upon the mucous membrane and the animal matter which serve to unite together the particles of the calculi than upon the calculi themselves.

"5. This dissolution and disaggregation of their principles may produce the result either of the natural expulsion of the calculi from the bladder with the flow of urine, or of their greater friability, which renders a cure more easy by the mechanical operation of lithotrity.

"6. It may be conceded, as a general proposition, that during the imbibition of the Vichy waters the health of calculous patients becomes ameliorated, and that the urinary passages do not undergo alterations which render surgical operations, when subsequently required, more serious.

"Stomach disorder, attended with heartburn and acidity, and indigestion in the general sense of the term, are in many cases capable of being cured or materially relieved, by the use of one or other of the

Vichy waters. When complicated with pain (gastralgia) and diminished power of the stomach, the Hôpital spring in some cases, the Lardy and Mesdames in others, would be most likely to have a beneficial effect ; in other cases, where a more energetic action is required, the Grande-Grille would be preferable.

“As respects the adaptation of the different springs to particular instances, no definite rule can be laid down, each case requiring a special investigation as to its peculiarities ; but in general terms it may be said that the Celestins is more employed in calculous affections, and sometimes in gout ; the Grande-Grille and Hôpital in gout and dyspepsia, complicated with a congested state of the liver. The same springs in visceral engorgements resulting from residence in tropical climates, or from malaria, the latter spring being less exciting than the former is more applicable in nervous cases. The *Puits Chomel* likewise in similar cases, and in chronic catarrh ; the Lucas in cutaneous affections and in scrofulous and glandular enlargements ; the Park spring, and the Mesdames, in various forms of dyspeptic, liver, and renal affection, and in nervous disorders connected or not with uterine derangement, where a more tonic effect is required than could be obtained from the other spring.

“In many instances it is advisable that persons who during their sojourn at Vichy have derived advantage from the waters should continue for some time afterwards to drink the exported water, which may, when requisite, be combined with the use of baths made with the Vichy salts.”—(*Extracted from the fourth edition of the “Baths of France.”*)

DR. G. PETIT.,

Late Inspector General of French army surgeons.

“The Vichy waters have enjoyed from time immemorial the reputation of being a remedy in disorders of the liver, and there can be no reputation better merited.

“In cases of chronic inflammation of this organ, of jaundice, with or without hepatic colics, and in all complaints of the biliary ducts they may be said to work miracles.

“When the affections of the liver become complicated with jaundice, there is more frequently a derangement of the biliary secretion than an affection of the liver itself. It often happens in this case, that calculi or gall stones are formed in the biliary vessels, and their expulsion causes almost always attacks, more or less violent, which are sometimes horribly painful and have been designated *hepatic colics*, and are often accompanied or followed by jaundice. If the use of these waters is continued they are almost certain to effect a cure of this disorder. They may not immediately prevent the attacks, which are liable to return as long as biliary calculi exist, but by rendering the bile liquid and preventing its coagulation they prevent the recurrence of the disorders.”—(*Du mode d'action des Eaux minérales de Vichy.*)

MR. PROSSER JAMES, M.D.,

Senior Physician to the City Dispensary,

Late Senior Physician to the Metropolitan Dispensary, &c.

“We may then sum up the effects of a Vichy course, when judiciously prescribed, as restorative to the digestive and assimilative functions, and invigorative to the general health. The tone of the stomach is soon improved, digestion becomes easier and more rapid—pain and weight after food disappearing. The bile flows more freely. The bowels become regular. Diarrhœa, if previously present, ceases. The consequence of these changes is better assimilation, and, therefore, flesh is often gained. With the improvement in nutrition, the colour returns to the cheeks and energy to the mind.

“The several properties of Vichy water having been already described, it is unnecessary to enter at length into the theories of those diseases in which it is chiefly recommended. From the general indications which have preceded, the English medical profession will have no difficulty in deducing the particular applications. Nevertheless, some brief observa-

tions on the more common uses of the remedy in question may serve as an epitome of the subject, and an index to the points most worthy of consideration. First of all it may be observed that an alkaline, thermal treatment is of most value in chronic cases. Next, that the diseases in which its effects are most marked are those implicating the organs of the abdominal cavity. From these propositions we may deduce that a certain degree of chronicity or obstinacy in the disease need not necessarily discourage a trial of this mode of cure. Lastly, the Vichy cure may be attempted in all cases in which alkalies are chemically indicated. In the two former cases a complete course of thermal treatment is to be carried out ; in the last, the indications can often be fulfilled by drinking at the springs, or even by the use of the exported water. Bearing in mind the chemical qualities of Vichy water, the physician will find numerous cases in his daily practice in which he may prove its value. It may safely and conveniently take the place of many of the common alkaline formulæ, especially those containing soda, and it will be found more certain in composition, and therefore in its effects, than ordinary soda water—an article which too frequently contains none of the alkali from which it takes its name, as a morsel of test-paper will easily establish.

“That by its mere chemical reaction, Vichy water should appease the pains dependent on an excess of acid in the *primæ viæ* is at once evident, and that thus numerous forms of INDIGESTION should be cured is equally easy of comprehension. On the other hand, this remedy has been found efficacious where the action called into play by its continual use seemed rather to have been the immediate cause of the cure.

“Closely allied to other are a number of liver complaints, in which the reputation of Vichy has long been established and the number of patients with this organ more or less involved, to be met around the Grande-Grille has already been alluded to. Vichy is in fact the Spa to which those resort who have served in Algeria and other hot countries, and who suffer from the effects of tropical climates on the liver ; besides which other diseases of the same viscus are here successfully combated.

“Out of 100 cases of what Dr. Barthez calls hepatalgia, or hepatic colic, 83 were cured and 17 relieved. In simple engorgement of the liver, with or without colic, 45 were cured, 40 relieved, and 15 received no benefit. This observer adds, that the treatment would have been still more beneficial had not some of the patients suffered from the injurious drugs administered before their resort to Vichy. Out of 100 cases of biliary calculi treated by the same author, 60 were cured, 21 relieved, and 19 underwent no change. JAUNDICE, which may be looked upon rather as a symptom than a disease, very often readily yields to the Thermal treatment at Vichy, while that condition sometimes denominated sluggishness of the liver, as well as those forms of constipation or diarrhœa dependant on irregular secretion of the bile, are equally relieved or removed. In the treatment of all these diseases drinking at the Grande-Grille is usually prescribed in conjunction with the baths.

“Engorgement of the spleen is as commonly treated at Vichy as that of the liver. Numerous subjects of this disease, contracted from residence in Africa, as well as those who have lived in marshy districts every year, find relief at this Spa. It is asserted that great enlargement of the pancreas following intermittent fever is speedily reduced by the conjoint use of the baths and drinking one of the springs, and, moreover, that with the diminution of the diseased organ, the general state of the patient is also improved. From the experience of the Military Hospital given in the work of Dr. Barthez, already cited, this disease would appear less amenable to the treatment than the same condition of the liver. Out of 100 cases of enlargement of the spleen originated by ague, the proportion was 37 cured and 45 relieved, while 18 continued in the same state as before treatment.

“It will not be out of place here to mention that peculiar *cachexia* so often engendered by marshy miasms. The pallid or sallow anæmic look of the patient, dependent on some profound alteration in the nutritive

functions, and accompanied by a vitiated state of all the secretions, and sometimes by passive hæmorrhages, more or less severe, has been attributed to a changed state of the blood—a diminution of its plasticity, a decrease of the red globules, and increase of the white—to use a long word LEUCOCYTHEMIA. This disease might be supposed incapable of benefit from alkalies, and many physicians would hesitate to try them. Dr. Barthez indeed admits that Vichy treatment would not be proper in such a state, if arising from a congenital lymphatic temperament, but he declares it to be curative when this condition is brought about by bad climate, indigestion, insufficient nutriment, inflammation of the liver or spleen, disease of the ganglionic system, or ague. Whenever prescribed for these cases the chalybeate springs would naturally be selected and their action might be assisted by ferruginous preparations and other appropriate tonics.

“The deposit of lithic acid and lithates may be immediately suspended by the introduction of the bicarbonate of soda into the system, so that we need not be surprised to learn that the Lithic Diathesis may undergo a change by a complete course of Thermal alkaline treatment. Uric acid, the urates and the cystic oxide are all very soluble in alkaline liquids. Vichy water is therefore a sort of specific for GRAVEL, provided that it be composed of either of those substances.

“In the deposit of lithites Vichy water is a natural remedy, and according to the statistics of Dr. Barthez, cured 55 per cent. of the patients, and relieved 40 per cent. more, only leaving 5 per cent. unimproved.

“After all the ordinary remedies in vesical catarrh have failed, good results have sometimes been brought about in this disease by a complete course of Vichy treatment. Of 97 cases admitted into the Military Hospital 35 are reported as cured and 51 relieved, no difference being perceptible in the remaining 11. Bathing as well as drinking is employed in this disease; enemas also have been found useful, and injections have been tried. This last local application deserves a further trial. Cases complicated with calculus, paralysis of the bladder, and incontinence of urine have also obtained relief.

“The baths are less employed in gout than other ailments, and the spring being cold, the treatment might be carried out in England with the bottled waters.

“In rheumatism, as in gout, we have excess of acid, as seen in the urine and perspiration, as well as an increase of fibrine in the blood, so that soda might seem to be indicated. Nevertheless, the treatment is not so completely established and has never been so popular as in gout. In muscular as well as articular rheumatism the series of hot baths would probably soothe the pain, while imbibing the water into the stomach might relieve other symptoms.

“Diabetes has been submitted to the Vichy treatment, with results that have encouraged some observers. In 100 cases treated by Barthez, 50 lost all traces of sugar, in 16 it greatly diminished, while in 34 it remained the same in quantity as before treatment, and that in spite of improved digestion and increased muscular strength following the treatment. From his observations this author concludes that if the patient on arriving at Vichy only secretes a small quantity of sugar, it may disappear under the Thermal treatment, but that if the quantity be large the patient should go to Vichy several successive years.

“Lastly, on the female reproductive organs, a Vichy course is said to act in a special manner, and learned writers have gone so far as to attribute to it an influence extending over a protracted period, in some instances being so carried away, as to ascribe to the mineral treatment an increase which has taken place in the families of patients, months and even years afterwards.

“CONGESTION OF THE UTERUS, as well as some degree of HYPERTROPHY, and all that terrible train of symptoms resulting from inflammation, irritation, or even natural stimulation of this organ may be appropriately submitted to the Thermal treatment, and every year numerous sufferers find at Vichy some relief from the consequences of

difficult or too frequent labours, painful miscarriages, irregularities of menstruation, falls or other accidental injuries, as well as natural and preventible sources of irritation. LEUCORRŒA should be looked upon as a symptom only, and its management referred to its cause.

"In CHLOROSIS, M. Petit, in his already quoted work, looks upon the efficacy of the Vichy treatment as equalled only in few other diseases."—
(*Extracted from "A Visit to Vichy."* London, 4th ed.)

CHEMICAL ANALYSIS OF THE SPRINGS BELONGING TO THE STATE.

Acids and Bases contained in each litre of the several Springs.	NAMES OF THE SPRINGS.						
	Grande Grille.	Chomel.	Hopital.	Célestins.	Parc.	Hauterive.	Mesdames.
Carbonic acid	4'418	4'429	4'719	4'705	5'071	5'640	5'029
Sulphuric „	164	164	164	164	177	164	141
Phosphoric „	070	038	025	050	076	625	traces
Arsenic „	001	001	001	001	001	001	002
Boracic „	traces	traces	traces	traces	traces	traces	traces
Hydrochloric acid	333	334	324	234	344	334	222
Silica	070	070	030	060	055	071	032
Protoxide of Iron	002	002	002	002	002	008	012
Do. Manganese	traces	traces	traces	traces	traces	traces	traces
Lime	169	169	222	180	239	168	235
Strontia	002	002	003	003	003	002	002
Magnesia	097	108	064	105	068	160	134
Potash	182	192	223	163	151	098	098
Soda	2.488	2'536	2'500	2.560	2'500	2'368	1'957
Bituminous matter	traces	traces	traces	traces	traces	traces	traces
Totals	7'997	8'043	8'302	8'327	8'687	9'039	7'866

Quantities of Saline Ingredients contained in each litre of the several Springs.	NAMES OF THE SPRINGS.						
	Grande Grille.	Chomel.	Hopital.	Célestins.	Parc.	Hauterive.	Mesdames.
Free Carbonic acid	908	768	1'067	1'049	1'555	2'183	1.908
Bicarb. of Soda	4'883	5'091	5'029	5'103	4'857	4'687	4'016
„ Potash	352	374	440	315	292	189	185
„ Magnesia	303	338	200	328	213	501	429
„ Strontia	303	004	005	005	005	003	003
„ Lime	434	427	570	462	644	432	604
„ Protox. of Iron	004	004	004	004	004	017	026
„ Manganese	traces	traces	traces	traces	traces	traces	traces
Sulphate of Soda	291	291	291	291	314	201	250
Phosphate „	130	070	046	091	140	046	traces
Arsenate „	002	002	002	002	002	002	003
Borate „	traces	traces	traces	traces	traces	traces	traces
Chloride of Sodium	534	534	518	534	520	534	355
Silics	070	070	050	060	055	071	032
Organic Bit. matter	traces	traces	traces	traces	traces	traces	traces
Totals	7'914	7'959	8'222	8'244	8'601	8'956	7'811